Claims

1.   (Currently amended) A method for processing interactive user control for a view of a scene displayed on a virtual window, comprising:

identifying a head of a user that is to interact with the scene;

storing an initial frame of user image data representing the head of the user, said view of the scene comprises a view-frustum [[is]] initially defined by a ~~triangular~~ gaze projection ~~set between~~ of a position of the head through outer edges of the virtual window ~~and a position of the head~~ when the position of the head is substantially normal to about a center point of the virtual window;

tracking the identified head of the user during display of the scene, the tracking enabling detection of a change in position of the head of the user, the tracking including,

identifying a search region within a frame of the user image data; and

comparing values within the search region to template values of the stored initial frame of image data;

adjusting the view-frustum in accordance with the change in position of the head of the user, the adjusting of the view-frustum being in response to tracking a move in the position of the head away from normal relative to the center point of the virtual window, the adjusted view-frustum defined by an updated gaze projection of the changed position of the head through the outer edges of the virtual window;

adjusting a scale of the scene according to a change in a distance of the head of the user from a capture device; and

repeating the identifying the search region, the comparing, and the adjusting for successive frames of the scene, wherein the comparing is performed with the stored initial frame of image data.

2. - 3. (cancelled)

4.   (Currently amended) A method for processing interactive user control for a view of a scene displayed on a virtual window, comprising:

identifying a head of a user that is to interact with the scene;

storing an initial frame of user image data representing the head of the user, said view of the scene comprises a view-frustum [[is]] initially defined by a ~~triangular~~ gaze projection ~~set between~~ of a position of the head through outer edges of the virtual window ~~and a position of the head~~ when the position of the head is substantially normal to about a center point of the virtual window;

tracking the identified head of the user during display of the scene, the tracking enabling detection of a change in position of the head of the user, the tracking including,

identifying a search region within a frame of the user image data; and

comparing values within the search region to template values of the stored initial frame of image data;

laterally adjusting the view-frustum in ~~accordance with~~ a direction opposite to the change in position of the head of the user, the lateral adjusting of the view-frustum being in response to tracking a move in the position of the head away from normal relative to the center point of the virtual window, the laterally adjusted view-frustum defined by an updated gaze projection of the changed position of the head through the outer edges of the virtual window;

adjusting a scale of the scene according to a change in a distance of the head of the user from a capture device; and

wherein the virtual position of the head being away from normal relative to the center point of the virtual window changes an angle of the ~~triangular~~ gaze projection, the change in angle of the ~~triangular~~ gaze projection ~~displays~~ effects a change in viewing angle of the scene provided by a video clip.

5.   (Original) The method of claim 4, wherein the change in viewing angle of the scene is a result of the detected movement of the head of the user to enable the interaction with the scene.

6.   (Previously presented) The method of claim 1, wherein successive frames are compared to determine a relative distance of the head of the user to manipulate the scale of the scene.

7.   (Previously presented) The method of claim 1, wherein the capture device has depth capturing capability.

8.   (Previously presented) The method of claim 1, wherein the initial frame of image data is marker-less.

9.   (Previously presented) The method of claim 1, wherein the initial frame of data is maintained throughout the scene.

10.   (Previously presented) The method of claim 1, wherein the scene is of a video game.

11.   (Original) The method of claim 10, wherein the interaction with the scene by tracking movement of the head of the user is independent of user hand-held controls for interacting with the video game.

12.   (Previously presented) The method of claim 1, wherein the method operation of tracking the identified head of the user during display of the scene includes,

tracking a facial portion of the head; and

matching gray scale image data associated with the facial portion to image associated with a template of the facial portion.

13.   (Currently amended) A method for processing interactive user control for a view of a scene displayed on a virtual window, comprising:

identifying a head of a user that is to interact with the scene;

storing an initial frame of user image data representing the head of the user, said view of the scene comprises a view-frustum [[is]] initially defined by a ~~triangular~~ gaze projection ~~set between~~ of a position of the head through outer edges of the virtual window and a position of the head when the position of the head is substantially normal to about a center point of the virtual window;

tracking the identified head of the user during display of the scene, the tracking enabling detection of a change in position of the head of the user, the tracking including,

identifying a search region within a frame of the user image data; and

comparing values within the search region to template values of the stored initial frame of image data;

adjusting the view-frustum in accordance with the change in position of the head of the user, the adjusting of the view-frustum being in response to tracking a move in the position of the head away from normal relative to the center point of the virtual window, the adjusted view-frustum defined by an updated gaze projection of the changed position of the head through the outer edges of the virtual window;

adjusting a scale of the scene according to a change in a distance of the head of the user from a capture device;

wherein adjusting the view-frustum in accordance with the change in position of the head of the user includes,

identifying a point of interest of the scene; and

modifying the view-frustum so that the point of interest appears at a constant position when displayed in successive scenes.

14.   (Currently amended) A method for processing interactive user control with a scene, comprising:

identifying a head of a user that is to interact with the scene;

storing an initial frame of image data representing the head of the user for a duration of the scene;

tracking the identified head of the user during display of the scene, the tracking enabling detection of a change in position of the head of the user, the tracking including,

identifying a search region within a frame of the image data; and

comparing values within the search region to template values of the initial frame of image data;

translating a view-frustum in ~~accordance with~~ <u>a direction opposite to</u> the change in position of the head of the user while maintaining a focus on an object in the scene through adjustment of a view port size;

adjusting a scale of the scene according to a change in a distance of the head of the user from a capture device; and

successively updating the view frustum according to the change in position of the head of the user relative to the initial frame of image data.

15.   (Currently amended) The method of claim 14, wherein a view-frustum is defined by a ~~triangular~~ gaze projection ~~set between~~ <u>of a virtual position of the head</u> <u>through</u> outer edges of a virtual window ~~and a virtual position of the head~~ when the virtual position of the head is normal to a center point of the virtual window.

16.   (Original) The method of claim 15, wherein translating the view-frustum maintains the virtual position of the head normal to the center point of the virtual window.

17.   (Original) The method of claim 15, wherein the translating enables a change in the scene provided through the virtual window.

18.   (Previously presented) The method of claim 14, wherein the method operation of tracking the identified head of the user during display of the scene includes,

scanning a portion of each frame in the image data for the identified head.

19.   (Previously presented) The method of claim 14, wherein the method operation of translating a view-frustum in accordance with the change in position of the head of the user includes,

shifting the scene defined through the view-frustum while maintaining a lateral orientation of the head to a view port.

20.   (Cancelled)

21.   (Original) The method of claim 14, wherein the method operation of translating a view-frustum in accordance with the change in position of the head of the user includes,

rotating the view-frustum about the head of a user according to the change in position of the head of the user.

22.-45. (Cancelled).

46.　(Currently amended) A system enabling interactive user control for defining a visible volume being displayed, comprising:

a computing device;

a display screen in communication with the computing device, the display screen configured to display image data defined through a view-frustum;

a tracking device in communication with the computing device, the tracking device capable of capturing a location change of a control object, wherein the location change of the control object effects an alignment of the view-frustum <u>in the opposite direction</u> relative to the display screen, wherein the computing device stores a marker-less reference image of the control object for comparison to each successive frame of image data captured through the tracking device and wherein the computing device adjusts a scale of the display image data according to a change in a distance of the control object from the tracking device, wherein the computing device is configured to adjust a view port size associated with the image data so that when the view frustum is adjusted, focus on an object within the view-frustum is maintained.

47.　(Original) The system of claim 46, wherein the tracking device is a camera.

48.　(Original) The system of claim 46, wherein the computing device is a video game console.

49.　(Previously presented) The system of claim 46, wherein the computing device is configured to map coordinates associated with the location change of the control object to a view change associated with a camera position.

50.　(Original) The system of claim 46, wherein the computing device is configured to maintain a substantially normal gaze direction relative to a plane associated with the display screen for both the view-frustum and a view-frustum associated with the location change of the control object.

51. - 58. (Cancelled)